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1 CLAIMS

2 1. A method of providing a user interface (UI) comprising:
3 rendering a DHTML document from an XML document using at least one
4 XSLT transformation (XSL-T); and
5 presenting a user interface based, at least in part, on the XSL-T that was
6 used to render the DHTML document.

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8 2. The method of claim 1, wherein said presenting comprises
9 automatically presenting the user interface.

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11 3. The method of claim 1, wherein the user interface comprises a
12 context block.

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14 4. The method of claim 1, wherein the user interface comprises an in-
15 document user interface.

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17 5. The method of claim 1, wherein the user interface comprises an
18 accelerator.

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20 6. The method of claim 1, wherein the user interface comprises one or
21 more of the following: a context block, an in-document user interface, and an
22 accelerator.

1 7. The method of claim 1, wherein the presenting comprises deciding
2 which user interface to present from a number of user interfaces.

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4 8. The method of claim 7, wherein deciding comprises:
5 ascertaining a user's actions within a document; and
6 presenting a user interface based on the ascertained user's actions.

7
8 9. One or more computer-readable media having computer-readable
9 instructions thereon which, when executed by a computer, implement the method
10 of claim 1.

11
12 10. A method of providing a user interface comprising:
13 considering multiple parameters one of which includes an XSL-T file; and
14 based upon the considered parameters, rendering a user interface sufficient
15 to enable a user to interact with a DHTML view that has been rendered by the
16 XSL-T file from an XML document.

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18 11. The method of claim 10, wherein one parameter comprises a user
19 location within a particular document.

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21 12. The method of claim 10, wherein one parameter comprises a portion
22 of an XML schema that corresponds to a user's selection.

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1 **13.** The method of claim 10, wherein one parameter comprises one or
2 more UI types that would be desirable to generate.

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4 **14.** The method of claim 10, wherein the parameters comprise:
5 a user location within a particular document;
6 a portion of an XML schema that corresponds to a user's selection; and
7 one or more UI types that would be desirable to generate.

8
9 **15.** The method of claim 10, wherein the considering of the multiple
10 parameters comprises considering one or more constructs within an XSL-T file.

11
12 **16.** The method of claim 10, wherein the considering of the multiple
13 parameters comprises identifying from multiple user interfaces which user
14 interfaces are more suited to have their functionalities provided by an in-document
15 user interface.

16
17 **17.** The method of claim 10 further comprising modifying structure of
18 the XML document based upon the user engaging the user interface.

19
20 **18.** The method of claim 10, wherein the user interface comprises an in-
21 document user interface.

1 **19.** One or more computer-readable media having computer-readable
2 instructions thereon which, when executed by a computer, implement the method
3 of claim 10.

4
5 **20.** A method of providing a user interface comprising:
6 making a selection in a DHTML view;
7 determining, based upon the selection, a corresponding selection in an
8 XML document;
9 determining, based upon the corresponding selection in the XML
10 document, a corresponding portion of an XML schema;
11 determining, based upon the XML schema portion, one or more types of
12 action that can be undertaken;
13 producing one or more operations that can be undertaken for various
14 determined action types; and
15 determining, from an XSL-T file that rendered the DHTML view, a user
16 interface type that can be displayed for a user and used to implement the one or
17 more operations.

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19 **21.** The method of claim 20, wherein the making of the selection
20 comprises moving a cursor to a particular area within a document.

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22 **22.** The method of claim 20, wherein the action types correspond to
23 ways in which a user might manipulate a portion of a document they have
24 selected.
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1 **23.** The method of claim 20, wherein the user interfaces comprise in
2 document user interfaces.

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4 **24.** The method of claim 20 further comprising displaying an in-
5 document user interface of a determined interface type for the user.

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7 **25.** The method of claim 24 further comprising manipulating structure
8 of the XML document based upon user input through the displayed user interface.

9
10 **26.** One or more computer-readable media having computer-readable
11 instructions thereon which, when executed by a computer, implement the method
12 of claim 20.

13
14 **27.** A method of manipulating an XML document comprising:
15 defining one or more crystals, each of which containing one or more
16 behaviors and an XSLT transformation for transforming an XML document into a
17 DHTML view;

18 using the one or more crystals to render a DHTML view from an XML
19 document;

20 enabling user interaction with the DHTML view; and

21 mapping, via the one or more behaviors, user interactions in the DHTML
22 view to the XML document.

1 **28.** The method of claim 27, wherein the one or more behaviors are
2 data-shape dependent.

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4 **29.** The method of claim 27, wherein the one or more behaviors are
5 data-shape dependent on a data shape defined by the XML document.

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7 **30.** The method of claim 27, wherein the one or more behaviors are
8 configured to function independently of an XML schema of which the XML
9 document is an instance.

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11 **31.** The method of claim 27, wherein the one or more behaviors are
12 configured to function independently of XML tags that might be used.

13
14 **32.** The method of claim 27, wherein the behaviors are implemented as
15 binary code.

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17 **33.** The method of claim 27, wherein the crystals are reusable across
18 different XML documents.

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20 **34.** One or more computer-readable media having computer-readable
21 instructions thereon which, when executed by a computer, implement the method
22 of claim 27.

1 **35.** One or more computer-readable media having computer-readable
2 instructions thereon which, when executed by a computer, cause the computer to:
3 provide multiple crystals, each of which containing one or more behaviors
4 and an XSLT transformation for transforming an XML document into a DHTML
5 view;
6 use one or more of the crystals to render a DHTML view from an XML
7 document;
8 attach at least one behavior to at least one DHTML tag;
9 ascertain that a user has interacted with a DHTML view associated with the
10 at least one DHTML tag; and
11 use the behavior associated with the at least one DHTML tag to map a user
12 interaction back to the XML document and make associated structural changes in
13 the XML document.

14
15 **36.** The one or more computer-readable media of claim 35, wherein the
16 behaviors are implemented as binary code.

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18 **37.** The one or more computer-readable media of claim 35, wherein the
19 behaviors are data shape dependent.

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21 **38.** The one or more computer-readable media of claim 35, wherein the
22 behaviors are not dependent upon an XML schema.
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